

### **ABSTRACT**

Disclosed is a projecting optical system for increasing a height of all optical system, the system including a lamp for irradiating light, a color divider for dividing colors of light irradiated from the lamp, a illumination mixer for irradiating the light with equal light intensity, a channel-changing prism for changing a channel of light irradiated from the illumination mixer to upward and downward, and a TIR prism for changing a direction and angle of light to a predetermined direction and angle.